Source Water Assessment Program (SWAP) Report
For
FLB INCORPORATED

Prepared by the Massachusetts Department of Environmental Protection, Bureau of Resource Protection, Drinking Water Program

Date Prepared: September 13, 2001

Table 1: Public Water System (PWS) Information

PWS NAME	FLB INCORPORATED
PWS Address	501 GLEASONDALE RD., RTE 62
City/Town	STOW
PWS ID Number	2286019
Local Contact	Paul McGovern
Phone Number	(978) 562-6444

Well Name	*Source ID#*	*Zone I (in feet)*	*IWPA (in feet)*	*Source Susceptibility*
Well #1	2286019-O1G	100	413	High

What is SWAP?

The Source Water Assessment Program (SWAP), established under the federal Safe Drinking Water Act, requires every state to:

? inventory land uses within the recharge areas of all public water supply sources;
? assess the susceptibility of drinking water sources to contamination from these land uses; and
? publicize the results to provide support for improved protection.

Maintaining Your Good Water Quality

Susceptibility of a drinking water source does *not* imply poor water quality. Actual water quality is best reflected by the results of regular water tests.

Water suppliers protect drinking water by monitoring for more than 100 chemicals, treating water supplies, and using source protection measures to ensure that safe water is delivered to the tap.

Introduction

We are all concerned about the quality of the water we drink. Drinking water wells may be threatened by many potential sources of contaminant, including septic systems, road salting, and improper disposal of hazardous materials. Citizens and local officials can work together to better protect these drinking water sources.

Purpose of this report:
This report is a planning tool to support local and state efforts to improve water supply protection. By identifying land uses within water supply protection areas that may be potential sources of contaminant, the assessment helps focus protection efforts on appropriate best management practices (BMPs) and drinking water source protection measures. Department of Environmental Protection (DEP) staff are available to provide information about funding and other resources that may be available to your community.

This report includes:
1. Description of the Water System
2. Discussion of Land Uses within Protection Areas
3. Recommendations for Protection
4. Attached Map of the Protection Areas

1. Description of the Water System

The well for the facility is a bedrock well located in an alley between the two on-site buildings. It is covered by a shed-like structure about three feet high and accessed through the roof of the shed-like structure. The well has a Zone I of 100 feet and an Interim Wellhead Protection Area (IWPA) of 413 feet. The well is located in an aquifer with a high vulnerability to contamination due to the absence of hydrogeologic barriers that can prevent contaminant migration Please refer to the attached map of the Zone I and IWPA.

The well serving the facility has treatment in the form of Activated Carbon, to remove organic compounds. For current information on monitoring results and treatment, please contact the Public Water System contact person listed above.

What is a Protection Area?

A well's water supply protection area is the land around the well where protection activities should be focused. Each well has a Zone I protective radius and an Interim Wellhead Protection Area (IWPA).

- **The Zone I** is the area that should be owned or controlled by the water supplier and limited to water supply activities.

- **The IWPA** is the larger area that is likely to contribute water to the well.

In many instances the IWPA does not include the entire land area that could contribute water to the well. Therefore, the well may be susceptible to contamination from activities outside of the IWPA that are not identified in this report.

What is Susceptibility?

Susceptibility is a measure of a well's potential to become contaminated due to land uses and activities within the Zone I and Interim Wellhead Protection Area (IWPA).

2. Discussion of Land Uses in the Protection Areas

There are a number of land uses and activities within the drinking water supply protection areas that are potential sources of contamination.

Key issues include:

1. **Inappropriate activities in Zone I;**
2. **An underground storage tank (UST) with heating oil;**
3. **Septic system;**
4. **Stormwater drains;**
5. **Industrial manufacturing (Plastic), Hazardous material storage; and**
6. **Aquatic wildlife.**

The overall ranking of susceptibility to contamination for the well is High, based on the presence of at least one high threat land use or activity in the IWPA.

1. **Zone I**- Currently, the well does not meet DEP's restrictions, which only allow water supply related activities in Zone I. The facility's Zone I contains a portion of both on-site manufacturing buildings, a gas station, septic system, the access road, and parking areas. Please note that systems not meeting DEP Zone I requirements must get DEP approval and address Zone I issues prior to increasing water use or modifying systems.

   Recommendations:

✓ Keep non-water supply activities out of the Zone I.

✓ Remove all non-water supply activities from the Zone I to comply with DEP's Zone I requirements.

✓ If the facility intends to continue using the structures and other land uses in the Zone I, use BMPs and restrict activities that could pose a threat to the water supply.

2. **Underground Storage Tank (UST)-** A UST with fuel oil is located at a gas station within the protection area. If managed improperly, USTs can be a potential contaminant source due to leaks or spills of the chemicals they store.

   Recommendations:

✓ Work with the gas station to encourage them to comply with all provisions of the regulations regarding USTs. Consult with the local fire department for any additional local code requirements regarding USTs.

✓ Any modifications to the USTs must be accomplished in a manner consistent with Massachusetts's plumbing, building, and fire code requirements.

Table 2: Table of Activities within the Water Supply Protection Areas

Facility Type	Potential Contaminant Sources	Zone I	IWPA	Threat	Comments
Industrial	Parking lot, driveways & roads	Yes	Yes	Moderate	Limit road salt usage and provide drainage away from wells
	Underground storage tank	Yes	Yes	High	
	Septic System	Yes	Yes	Moderate	See septic systems brochure in the appendix
	Industrial manufacture	Yes	Yes	High	Facility is plastics manufacturer
	Hazardous material storage	Yes	Yes	High	Chemicals used in manufacturing processes
	Utility substation	Yes	Yes	Low	On concrete pad
	Storm water drain	Yes	Yes	Low	

*** -For more information on Contaminants of Concern associated with individual facility types and land uses please see the SWAP Draft Land Use / Associated Contaminants Matrix on DEP's website - www.state.ma.us/dep/brp/dws/.**

Glossary

Zone I: The area closest to a well; a 100 to 400 foot radius proportional to the well's pumping rate. To determine your Zone I radius, refer to the attached map.

IWPA: A 400 foot to ½ mile radius around a public water supply well proportional to its pumping rate; the area DEP recommends for protection in the absence of a defined Zone II. To determine IWPA radius, refer to the attached map.

Zone II: The primary recharge area defined by a hydrogeologic study.

Aquifer: An underground water-bearing layer of permeable material that will yield water in a usable quantity to a well.

Hydrogeologic Barrier: An underground layer of impermeable material that resists penetration by water.

Recharge Area: The surface area that contributes water to a well.

3. **Septic system -** The septic system is located within the Zone I and IWPA of the well. If a septic system fails or is not properly maintained it could be a potential source of microbial contamination. Improper disposal of household hazardous chemicals to septic systems is a potential source of contamination to the water supply.

   Recommendations:

✓ Staff should be instructed on the proper disposal of spent chemicals. Include custodial staff, groundskeepers, and certified operator.

✓ Septic system components should be located, inspected, and maintained on a regular basis. Refer to the appendices for more information regarding septic systems.

4. **Stormwater drains –**The stormwater drains are located within the IWPA, and drains into the nearby surface water. As flowing storm water travels, it picks up debris and contaminants from streets, parking areas and lawns. Common potential contaminants include lawn chemicals, pet waste, leakage from dumpsters, household hazardous waste, and contaminants from vehicle leaks, maintenance, washing or accidents.

   Recommendations:

✓ Have the catch basins inspected, maintained, and cleaned on a regular schedule.

✓ The Department recommends the public water supplier consider nonstructural techniques such as parking lot sweeping to reduce the amount of potential contaminants in storm water runoff. Additionally, the public water supplier may want to consider structural BMPs (e.g. stormwater swale, detention basin, etc.) as part of comprehensive storm water management plan for the site (refer to Storm Water Management Handbook, Volume 1 and 2 for information on BMPs).

5. **Industrial manufacturing, hazardous material storage, and furniture stripping** Lazott Plastics is a plastics manufacturer, and one of the tenants in the other on-site building strips furniture. As a result of their daily operations at the facility different chemicals are used. Specifically, thinners, varnishes and other solvents are used in stripping furniture. If improperly handled or if leaks or spills occur, the chemicals could potentially contaminate the water supply.

   Recommendation:

✓ Use BMPs to ensure the proper handling and storage of hazardous materials.

✓ The hazardous materials should be stored in well-labeled containers, in a secure and properly labeled area within the IWPA.

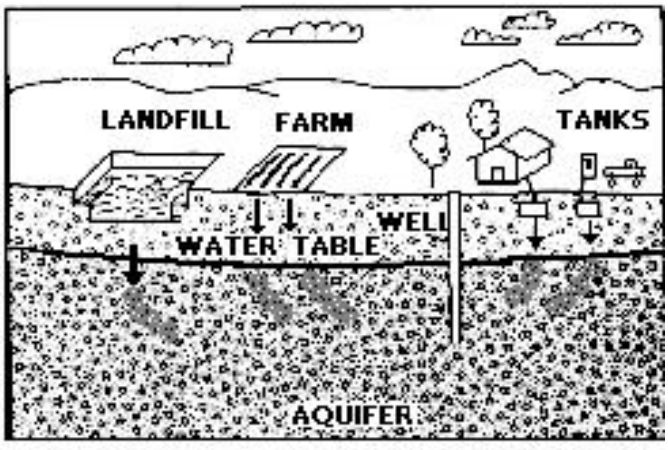

Figure 1: Example of how a well could become contaminated by different land uses and activities.

6. **Aquatic wildlife** - A pond is located approximately 90 feet from the well, and a stream is located within the Zone 1 and IWPA of the well. Duck and other wildlife waste in and around the pond is a potential source of contamination to the water supply

   Recommendation:

✓ Discourage wildlife by prohibiting the feeding of ducks and wildlife.

3. Protection Recommendations

FLB Incorporated should review and adopt the following recommendations at the facility:

Zone I:

✓ Redirect road and parking lot drainage away from well. Work with your community to ensure that stormwater runoff in the IWPA is directed away from the well and is treated according to DEP guidance.

For More Information:

Contact Josephine Yemoh-Ndi in DEP's Worcester Office at (508) 792-7650 x 5030 for more information and for assistance in improving current protection measures.

More information relating to drinking water and source protection is available on DEP's web site at: www.state.ma.us/dep/brp/dws.

Copies of this assessment have been provided to the water department, town boards, the town library and the local media.

- ✓ Consider well relocation if Zone I threats cannot be mitigated.

Training and Education:

- ✓ Train staff on proper hazardous material use, disposal, emergency response, and best management practices; include custodial staff, groundskeepers, and certified operator.
- ✓ Post drinking water protection area signs at key visibility locations.

Facilities Management:

- ✓ Implement standard operating procedures regarding proper storage, use and disposal of hazardous materials.
- ✓ Upgrade all oil/hazardous material storage tanks to incorporate proper containment and safety practices.
- ✓ Implement Best Management Practices (BMPs) for the use of fertilizer, herbicides and pesticides on facility property.
- ✓ Monitor progress on any ongoing remedial action conducted for the known contamination site.
- ✓ For utility transformers that may contain PCBs, contact the utility to determine if PCBs have been replaced. If PCBs are present, urge their immediate replacement. Keep the area near the transformer free of tree limbs that could endanger the transformer in a storm.

Planning:

- ✓ Work with local officials in Stow to include the facility IWPA in Aquifer Protection District Bylaws and to assist you in improving protection.
- ✓ Have a plan to address short-term water shortages and long-term water demands. Keep the phone number of a bottled water company readily available.
- ✓ Supplement the SWAP assessment with additional local information and incorporate it into water supply educational efforts. Use a potential contaminant threat inventory to assist in setting priorities, focusing inspections, and creating educational activities.

These recommendations are only part of your ongoing local drinking water source protection. Citizens and community officials should use this SWAP report to spur discussion of local drinking water protection measures.

Attachment:

- Map of the Public Water Supply (PWS) Protection Area.
- Recommended Source Protection Measures Factsheet
- Your Septic System Brochure
- Wellhead Protection Grant Program Fact Sheet
- Source Protection Sign Order Form

Additional Documents:

To help with source protection efforts, more information is available by request or online at www.state.ma.us/dep/brp/dws, including:

1. Water Supply Protection Guidance Materials such as model regulations, Best Management Practice information, and general water supply protection information.
2. MA DEP SWAP Strategy
3. Land Use Pollution Potential Matrix
4. Draft Land/Associated Contaminants Matrix